

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.  
PCT/GB2004/005390

International filing date (day/month/year)  
22.12.2004

Priority date (day/month/year)  
23.12.2003

International Patent Classification (IPC) or both national classification and IPC

C07D207/06, C07D211/22, C07D211/46, C07D207/12, C07D207/08, C07D211/18, C07D211/38, C07D207/10,

Applicant

SCHOOL OF PHARMACY, UNIVERSITY OF LONDON

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk - Pays Bas  
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl  
Fax: +31 70 340 - 3016

Authorized Officer

Diederer, J

Telephone No. +31 70 340-1097



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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-36
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-36
Industrial applicability (IA)	Yes: Claims	1-36
	No: Claims	

2. Citations and explanations

**see separate sheet**

Reference is made to the following documents:

- D1: WO 91/05824 A (NAT RES DEV) 2 May 1991 (1991-05-02)
- D2: COLLIER D A ET AL: "SYNTHESIS, MOLECULAR MODELING, DNA BINDING, AND ANTITUMOR PROPERTIES OF SOME SUBSTITUTED AMIDOANTHRAQUINONES" JOURNAL OF MEDICINAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. WASHINGTON, US, vol. 31, no. 4, 1988, pages 847-857, XP002063827 ISSN: 0022-2623
- D3: AGBANDJE M ET AL: "ANTHRACENE-9,10-DIONES AS POTENTIAL ANTICANCER AGENTS. SYNTHESIS, DNA-BINDING, AND BIOLOGICAL STUDIES ON A SERIES OF 2,6-DISUBSTITUTED DERIVATIVES" JOURNAL OF MEDICINAL CHEMISTRY, AMERICAN CHEMICAL SOCIETY. WASHINGTON, US, vol. 35, no. 8, 1992, pages 1418-1429, XP002063825 ISSN: 0022-2623

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-36 does not involve an inventive step in the sense of Article 33(3) PCT.

Document D1 is considered the closest prior art document. The said document discloses anthraquinone compounds in which the amino alkyl amino substituent is among others cyclic nitrogen containing groups (see claim 1 of D1 in which R' and R" together are a C2-6 alkylene group which with the nitrogen atom to which R' and R" are attached forms a heterocyclic group having 3 to 7 atoms).

The difference of this disclosure and the present application is that in the present application, this heterocyclic structure is substituted by at least one X2 or X2 substituted

C1-4 alkyl group, in which X2 is halogen, hydroxyl, C1-6alkoxyl, aryloxy or acyloxy group. The problem to be solved by the applicant was to provide alternative anthraquinone compounds for use in the treatment of cancer.

Documents D2 and D3 disclose amidoanthraquinone compounds, which bear cyclic groups (compounds 4,5,7,8,9 in D2 and compounds 13-16 in D3 bear piperidine groups), of which a few are substituted by CH<sub>2</sub>OH and CH<sub>2</sub>CH<sub>2</sub>-OH groups. The compounds with these substituents show the lowest IC<sub>50</sub> values, showing that these compounds have the highest activities with respect to tumour cell lines. The difference of these compounds with the compounds of the present application is that the compounds of D2 and D3 are anthraquinone compounds, substituted with substituted amido groups, whereas in the present application, the anthraquinone compounds are substituted with at least one substituted amine group.

A skilled person confronted with the problem of providing alternative anthraquinone compounds for use in the treatment of cancer would, starting from D1, use the teaching of D2 and D3 to come to the solution of the present application. He would substitute the heterocyclic group in D1 with a (CH<sub>2</sub>)<sub>1</sub>-2OH group, as he would expect this to have a positive effect on the antitumour activity of the compounds.

It is therefore considered that the subject-matter of claims 1-29 is not inventive with respect to Article 33(3) PCT.

Claims 30-36 concern intermediate compounds and their processes to prepare such compounds. These intermediate compounds are used to prepare the compounds of formula I of claim 1 of the present application. As these compounds are not inventive, the intermediate products cannot be regarded as inventive either. The subject-matter of claims 30-36 is therefore considered not to involve an inventive step according to Article 33(3) PCT.



8 June 2006

The International Bureau of WIPO  
34 Chemin des Colombettes  
1211 Geneva 20  
Switzerland

BY COURIER

Dear Sirs

**International Patent Application No. PCT/GB 04/05390**  
**School of Pharmacy, University of London**  
**Our Ref: HMJ03752WO**

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The addresses for inventors Laurence Hylton PATTERSON and Klaus  
PORS have changed to:

The Institute of Cancer Therapeutics  
University of Bradford  
West Yorkshire  
BD7 1DP  
United Kingdom

Please issue Form PCT/IB/306 as soon as possible as the 30 month term  
mentioned in R92 bis(b) is 23 June 2006.

Yours faithfully  
GILL JENNINGS & EVERY LLP

H M M Jones

HMJ/ae

## **Gill Jennings & Every LLP**

**European Patent Attorneys**  
**European Trade Mark Attorneys**

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**IT Systems:** G G Amabilino  
**Patent Formalities:** A A Heathcote  
**Records:** **Patents:** G M Alderman  
**Trade Marks:** J H Bedding

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**Also at:** Alicante  
Cambridge  
Munich

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Gill Jennings & Every LLP is registered in England  
and Wales as a Limited Liability Partnership.  
Registered No. 00313065



7 June 2006

The International Bureau of WIPO  
34 Chemin des Colombettes  
1211 Geneva 20  
Switzerland

Dear Sirs

**International Patent Application No. PCT/GB 04/05390**  
**School of Pharmacy, University of London**  
**Our Ref: HMJ03752WO**

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We request the recordal of a change in respect of the applicant for all designated states other than US. The application has been assigned to the following company:

Somanta Limited

a company registered in England and Wales

of 117 Alexander Park Road, London, N10 2DP, UK

Please record the change with immediate effect (the 30 months indicated under Rule 92 bis(b) is **23 June 2006**).

Yours faithfully  
GILL JENNINGS & EVERY LLP

H M M Jones

HMJ/ae

## **Gill Jennings & Every LLP**

**European Patent Attorneys**  
**European Trade Mark Attorneys**

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**Partnership Secretary:** S J Pack

**Accounts:** A J Shiafkou  
**IT Systems:** G G Amabilino  
**Patent Formalities:** A A Heathcote  
**Records:** **Patents:** G M Alderman  
**Trade Marks:** J H Bedding

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**Also at:** Alicante  
Cambridge  
Munich

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Gill Jennings & Every LLP is registered in England and Wales as a Limited Liability Partnership.  
Registered No. 0033165  
Registered Office: Broadgate House, 7 Eldon Street, London EC2M 7LH

From the INTERNATIONAL BUREAU

**PCT**NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

GILL JENNINGS & EVERY  
Broadgate House  
7 Eldon Street  
London EC2M 7LH  
ROYAUME-UNI

Date of mailing (day/month/year) 16 February 2005 (16.02.2005)	<b>IMPORTANT NOTIFICATION</b>
Applicant's or agent's file reference HMJ03752WO	
International application No. PCT/GB04/005390	
International publication date (day/month/year)	
	International filing date (day/month/year) 22 December 2004 (22.12.2004)
	Priority date (day/month/year) 23 December 2003 (23.12.2003)
Applicant SCHOOL OF PHARMACY, UNIVERSITY OF LONDON et al	

- By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- (If applicable)* The letters "NR" appearing in the right-hand column denote a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- (If applicable)* An asterisk (\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b) (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as the priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
23 December 2003 (23.12.2003)	0329820.5	GB	08 February 2005 (08.02.2005)
24 December 2003 (24.12.2003)	0330011.8	GB	08 February 2005 (08.02.2005)

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Cruz Juan

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**PCT**

FIRST NOTICE INFORMING THE APPLICANT OF  
THE COMMUNICATION OF THE INTERNATIONAL  
APPLICATION (TO DESIGNATED OFFICES WHICH  
DO NOT APPLY THE 30 MONTH TIME LIMIT  
UNDER ARTICLE 22(1))

(PCT Rule 47.1(c))

To:

GILL JENNINGS & EVERY  
Broadgate House  
7 Eldon Street  
London EC2M 7LH  
ROYAUME-UNI

Date of mailing (day/month/year) 28 July 2005 (28.07.2005)		
Applicant's or agent's file reference HMJ03752WO		<b>IMPORTANT NOTICE</b>
International application No. PCT/GB2004/005390	International filing date (day/month/year) 22 December 2004 (22.12.2004)	
Applicant SCHOOL OF PHARMACY, UNIVERSITY OF LONDON et al		Priority date (day/month/year) 23 December 2003 (23.12.2003)

- ATTENTION:** For any designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002 (30 months from the priority date), **does apply**, please see Form PCT/IB/308(Second and Supplementary Notice) (to be issued promptly after the expiration of 28 months from the priority date).
- Notice is hereby given that the following designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002, **does not apply**, has/have requested that the communication of the international application, as provided for in Article 20, be effected under Rule 93bis.1. The International Bureau has effected that communication on the date indicated below:  
07 July 2005 (07.07.2005)

CH

In accordance with Rule 47.1(c-bis)(i), those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

- The following designated Offices, for which the time limit under Article 22(1), as in force from 1 April 2002, **does not apply**, have not requested, as at the time of mailing of the present notice, that the communication of the international application be effected under Rule 93bis.1:

LU, SE, TZ, UG, ZM

In accordance with Rule 47.1(c-bis)(ii), those Offices accept the present notice as conclusive evidence that the Contracting State for which that Office acts as a designated Office does not require the furnishing, under Article 22, by the applicant of a copy of the international application.

#### 4. TIME LIMITS for entry into the national phase

For the designated Office(s) listed above, and unless a demand for international preliminary examination has been filed before the expiration of **19 months** from the priority date (see Article 39(1)), the applicable time limit for entering the national phase will, **subject to what is said in the following paragraph**, be **20 MONTHS** from the priority date.

In practice, **time limits other than the 20-month time limit** will continue to apply, for various periods of time, in respect of certain of the designated Offices listed above. For **regular updates on the applicable time limits** (20 or 21 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II. National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pc/en/index.html>.

It is the applicant's **sole responsibility** to monitor all these time limits.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Nora Lindner

From the INTERNATIONAL BUREAU

**PCT**

SECOND AND SUPPLEMENTARY NOTICE  
INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION (TO DESIGNATED OFFICES  
WHICH APPLY THE 30 MONTH TIME  
LIMIT UNDER ARTICLE 22(1))

(PCT Rule 47.1(c))

To:

GILL JENNINGS & EVERY  
Broadgate House  
7 Eldon Street  
London EC2M 7LH  
ROYAUME-UNI

Date of mailing ( <i>day/month/year</i> ) 27 April 2006 (27.04.2006)		
Applicant's or agent's file reference H MJ03752WO		<b>IMPORTANT NOTICE</b>
International application No. PCT/GB2004/005390	International filing date ( <i>day/month/year</i> ) 22 December 2004 (22.12.2004)	
		Priority date ( <i>day/month/year</i> ) 23 December 2003 (23.12.2003)
Applicant SCHOOL OF PHARMACY, UNIVERSITY OF LONDON et al		

- ATTENTION:** For any designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002 (30 months from the priority date), **does not apply**, please see Form PCT/IB/308(First Notice) issued previously.
- Notice is hereby given that the following designated Office(s), for which the time limit under Article 22(1), as in force from 1 April 2002, **does apply**, has/have requested that the communication of the international application, as provided for in Article 20, be effected under Rule 93bis.1. The International Bureau has effected that communication on the date indicated below:  
07 July 2005 (07.07.2005)

AU, AZ, BY, CN, CO, DZ, EP, HU, KG, KP, KR, MD, MK, MZ, NA, PG, RU, SY, TM, US

In accordance with Rule 47.1(c-bis)(i), those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

- The following designated Offices, for which the time limit under Article 22(1), as in force from 1 April 2002, **does apply**, have not requested, as at the time of mailing of the present notice, that the communication of the international application be effected under Rule 93bis.1:

AE, AG, AL, AM, AP, AT, BA, BB, BG, BR, BW, BZ, CA, CR, CU, CZ, DE, DK, DM, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, ID, IL, IN, IS, JP, KE, KZ, LC, LK, LR, LS, LT, LV, MA, MG, MN, MW, MX, NI, NO, NZ, OA, OM, PH, PL, PT, RO, SC, SD, SG, SK, SL, SM, TJ, TN, TR, TT, UA, UZ, VC, VN, YU, ZA, ZW

In accordance with Rule 47.1(c-bis)(ii), those Offices accept the present notice as conclusive evidence that the Contracting State for which that Office acts as a designated Office does not require the furnishing, under Article 22, by the applicant of a copy of the international application.

**4. TIME LIMITS for entry into the national phase**

For the designated or elected Office(s) listed above, the applicable time limit for entering the national phase will, **subject to what is said in the following paragraph**, be **30 MONTHS** from the priority date.

In practice, **time limits other than the 30-month time limit** will continue to apply, for various periods of time, in respect of certain of the designated or elected Office(s) listed above. For **regular updates on the applicable time limits** (30 or 31 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

It is the applicant's **sole responsibility** to monitor all these time limits.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Nora Lindner

# PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum) HMJ03752WO

**Box No. I TITLE OF INVENTION**  
ANTI CANCER COMPOUNDS

**Box No. II APPLICANT** ☐ This person is also inventor

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

SCHOOL OF PHARMACY, UNIVERSITY OF LONDON  
29-39 Brunswick Square  
London  
WC1N 1AX  
United Kingdom

Telephone No.

Facsimile No.

Teleprinter No.

Applicant's registration No. with the Office

State (that is, country) of nationality:  
GB

State (that is, country) of residence:  
GB

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

**Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)**

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

PATTERSON, Laurence Hylton  
School of Pharmacy, University of London  
29-39 Brunswick Square  
London  
WC1N 1AX  
United Kingdom

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:  
GB

State (that is, country) of residence:  
GB

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

**Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE**

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

Gill Jennings & Every  
Broadgate House  
7 Eldon Street  
London  
EC2M 7LH  
United Kingdom

Telephone No.

+44 20 7377 1377

Facsimile No.

+44 20 7377 1310

Teleprinter No.

Agent's registration No. with the Office

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

<b>Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)</b>			
<i>If none of the following sub-boxes is used, this sheet should not be included in the request.</i>			
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i>  PORRS, Klaus School of Pharmacy, University of London 29-39 Brunswick Square London WC1N 1AX United Kingdom		This person is:  <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>	
State <i>(that is, country)</i> of nationality: DK		State <i>(that is, country)</i> of residence: GB	
This person is applicant for the purposes of:		<input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i>  TEESDALE-SPITTLE, Paul Henry School of Biological Sciences Te Kura Matauranga Koiora Victoria University of Wellington P.O. Box 600 Wellington, NEW ZEALAND		This person is:  <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>	
State <i>(that is, country)</i> of nationality: GB		State <i>(that is, country)</i> of residence: NZ	
This person is applicant for the purposes of:		<input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i>  		This person is:  <input type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>	
State <i>(that is, country)</i> of nationality:		State <i>(that is, country)</i> of residence:	
This person is applicant for the purposes of:		<input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i>  		This person is:  <input type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>	
State <i>(that is, country)</i> of nationality:		State <i>(that is, country)</i> of residence:	
This person is applicant for the purposes of:		<input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i>  		This person is:  <input type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only <i>(If this check-box is marked, do not fill in below.)</i>	
State <i>(that is, country)</i> of nationality:		State <i>(that is, country)</i> of residence:	
This person is applicant for the purposes of:		<input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input type="checkbox"/> Further applicants and/or (further) inventors are indicated on another continuation sheet.			

**Box No. V DESIGNATIONS**

The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is not designated for any kind of national protection
- ☐ KR Republic of Korea is not designated for any kind of national protection
- ☐ RU Russian Federation is not designated for any kind of national protection

(The check-boxes above may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. See the Notes to Box No. V as to the consequences of such national law provisions in these and certain other States.)

**Box No. VI PRIORITY CLAIM**

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office
item (1) 23 December 2003	0329820.5	GB		
item (2) 24 December 2003	0330011.8	GB		
item (3)				

☐ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:

☒ all items    ☐ item (1)    ☐ item (2)    ☐ item (3)    ☐ other, see Supplemental Box

\* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)): . . .

**Box No. VII INTERNATIONAL SEARCHING AUTHORITY**

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / .....

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day/month/year) 15 September 2004    Number RS111247GB    Country (or regional Office) EPO

**Box No. VIII DECLARATIONS**

The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

Number of  
declarations

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Box No. VIII (i)   | Declaration as to the identity of the inventor   | : |
| <input type="checkbox"/> Box No. VIII (ii)  | Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent             | : |
| <input type="checkbox"/> Box No. VIII (iii) | Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application | : |
| <input type="checkbox"/> Box No. VIII (iv)  | Declaration of inventorship (only for the purposes of the designation of the United States of America)                               | : |
| <input type="checkbox"/> Box No. VIII (v)   | Declaration as to non-prejudicial disclosures or exceptions to lack of novelty   | : |

**Box No. IX CHECK LIST; LANGUAGE OF FILING**

This international application contains:		This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):	Number of items
(a) in paper form, the following number of sheets:		1. <input checked="" type="checkbox"/> fee calculation sheet	1
request (including declaration sheets) :	4	2. <input type="checkbox"/> original separate power of attorney	:
description (excluding sequence listings and/or tables related thereto) :	46	3. <input type="checkbox"/> original general power of attorney	:
claims :	6	4. <input checked="" type="checkbox"/> copy of general power of attorney; reference number, if any: .....	1
abstract :	1	5. <input type="checkbox"/> statement explaining lack of signature	:
drawings :	4	6. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): .....	:
<b>Sub-total number of sheets :</b>	<b>61</b>	7. <input type="checkbox"/> translation of international application into (language): .....	:
sequence listings :	:	8. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material	:
tables related thereto :	:	9. <input type="checkbox"/> sequence listings in computer readable form (indicate type and number of carriers)	:
(for both, actual number of sheets if filed in paper form, whether or not also filed in computer readable form; see (c) below)	:	(i) <input type="checkbox"/> copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application):	:
<b>Total number of sheets :</b>	<b>61</b>	(ii) <input type="checkbox"/> (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter	:
(b) <input type="checkbox"/> only in computer readable form (Section 801(a)(i))	:	(iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the sequence listings mentioned in left column	:
(i) <input type="checkbox"/> sequence listings	:	10. <input type="checkbox"/> tables in computer readable form related to sequence listings (indicate type and number of carriers)	:
(ii) <input type="checkbox"/> tables related thereto	:	(i) <input type="checkbox"/> copy submitted for the purposes of international search under Section 802(b-quater) only (and not as part of the international application)	:
(c) <input type="checkbox"/> also in computer readable form (Section 801(a)(ii))	:	(ii) <input type="checkbox"/> (only where check-box (b)(ii) or (c)(ii) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Section 802(b-quater)	:
(i) <input type="checkbox"/> sequence listings	:	(iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the tables mentioned in left column	:
(ii) <input type="checkbox"/> tables related thereto	:	11. <input type="checkbox"/> other (specify): .....	:
Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the			
<input type="checkbox"/> sequence listings: .....			
<input type="checkbox"/> tables related thereto: .....			
(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)			
Figure of the drawings which should accompany the abstract:		Language of filing of the international application: <b>ENGLISH</b>	

**Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE**

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

For The Applicant  
Gill Jennings & Every

JONES, Helen Marjorie Meredith

Date: 23 December 2004

For receiving Office use only		2. Drawings: <input type="checkbox"/> received:  <input type="checkbox"/> not received:
1. Date of actual receipt of the purported international application:		
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA /	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid	

For International Bureau use only
Date of receipt of the record copy by the International Bureau:

# PCT

## FEE CALCULATION SHEET

### Annex to the Request

For receiving Office use only

International Application No.

Date stamp of the receiving Office

Applicant's or agent's  
file reference

HMJ03752WO

Applicant

School of Pharmacy, University of London

#### CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE . . . . . 55 T

2. SEARCH FEE . . . . . 1078 S

International search to be carried out by

(If two or more International Searching Authorities are competent to carry out the international search, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FILING FEE

Where items (b) and/or (c) of Box No. IX apply, enter Sub-total number of sheets } 61

Where items (b) and (c) of Box No. IX do not apply, enter Total number of sheets }

i1 first 30 sheets . . . . . 628 i1

i2 31 x 7 = 217 i2  
number of sheets in excess of 30 fee per sheet

i3 additional component (only if sequence listing and/or tables related thereto are filed in computer readable form under Section 801(a)(i), or both in that form and on paper, under Section 801(a)(ii)):

400 x = 0 i3  
fee per sheet

Add amounts entered at i1, i2 and i3 and enter total at I . . . . . 845.00 I

(Applicants from certain States are entitled to a reduction of 75% of the international filing fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the international filing fee.)

4. FEE FOR PRIORITY DOCUMENT (if applicable) . . . . . 44.00 P

5. TOTAL FEES PAYABLE . . . . . 2022.00

Add amounts entered at T, S, I and P, and enter total in the TOTAL box

TOTAL

#### MODE OF PAYMENT

☐ authorization to charge  
deposit account (see below)

☐ postal money order

☐ cash

☐ coupons

☒ cheque

☐ bank draft

☐ revenue stamps

☐ other (specify):

#### AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCOUNT

(This mode of payment may not be available at all receiving Offices)

☐ Authorization to charge the total fees indicated above.

☐ (This check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.

☐ Authorization to charge the fee for priority document.

Receiving Office: RO/

Deposit Account No.:

Date:

Name:

Signature: